





March 1, 2022

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Cover Photo: A ski trail leads the way to the Worthington Glacier Snow Course this March Survey. Worthington was measure with 78 inches of snow depth and 19.7 inches of water content, or 91% of normal. Contrastingly, most of Alaska's snowpacks were above or well above normal with over 31 sites setting new March record highs. Photo by NRCS Civil Engineering Technician Brant Dallas.

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# **General Overview**

### **Updated 1991-2020 Snow Survey and Water Supply Normals**

Every 10 years, The NRCS's Snow Survey and Water supply Forecasting Program (SSWSF) produces new 30-year central tendency statistics. These are often call the site Normals. The new 1991-2020 Normals have been developed and are being used in this publication. A detailed discussion can be found on the National Water and Climate Center's website <a href="here">here</a>. The main take away is that "100% of Normal" this winter is not likely to be the same as it was last decade. A side-by-side comparison of the new and old Alaska snowpack Normals for February can be found here.

#### SnowPack

If snow was money, we'd be on the way to the bank! Snowpacks across most of Alaska and the Yukon Territory are remarkably high. With the exception of two low elevation snow courses in rain-soaked Southeast Alaska, all reporting stations in the network made snowpack gains in February, with the majority of these stations dramatically increasing.

February was exceptional in several basins across the state. A series of giant storms walloped the Susitna Basin mid-month. The 15.6" gained over the month at the Fishhook Basin snow course is nearly five times normal. It is also the most substantial monthly gain ever in the 59-year record from this snow course. This historic snow event was accompanied by a historic avalanche cycle, the second in as many years. Archangel Road snow course, established in 1982, was nearly hit during last year's historic avalanche cycle. This year's avalanche buried it completely. Further west in the basin, the four reporting sites south of Curry Ridge all boasted their largest February gains on record. The 5.7" of snow water equivalent gained at Willow Airstrip in February is more than five times normal and the most in 57 observations.

The Susitna was not the only beneficiary of the February storm train. In Southcentral Alaska, Indian Pass, Valdez and Lowe River all reported the largest February gains in their history. In the Copper River Basin, Fielding Lake, Paxson, Chistochina, and Kenny Lake School all boasted their biggest February increases. The Tanana, already reporting a historic snowpack at the beginning of February, made substantial gains through the month, with several sites making record-breaking advances through the month.

		Basi	n Index
		Current	Last Year
Alaska Statewide Snowpack	# of Sites	Percent of Median	Percent of Median
Upper Yukon Basin	34	163	128
Central Yukon Basin	7	192	100
Tanana Basin	20	221	105
Koyukuk Basin	7	157	85
Kuskokwim Basin	2	174	153
Copper Basin	17	142	101
Matanuska-Susitna Basin	15	156	103
Northern Cook Inlet	14	152	125
Kenai Peninsula	20	115	141
Western Gulf of Alaska	8	118	113
Southeast Alaska	10	147	128

## **General Overview**

### **Snowpack continued**

February gains on the Kenai Peninsula were a mixed bag. Grouse Creek Divide and Moose Pass received nearly three times average monthly snow fall, whereas Portage, Turnagain Pass, and Jean Lake all reported less than half. Snowpack in this area is generally above normal, but with several areas falling short of the mark.

In northern Alaska, gains were also a mixed bag. The stations in the upper Koyukuk, the Seward Peninsula and along the Dalton highway reported less than normal snowfall. Downstream, the stations in the central Yukon and Kuskokwim reported closer to normal February snow totals.

March readings from the Yukon Territory were astounding. Of the 37 sites measured this month, 17 were all-time records. An additional 6 sites reported their second highest readings. Snowpack in the Yukon is robust.

The snowpack across the state of Alaska on March 1 is well above average. There are small pockets of below normal snowpack but they are few and far between, and mostly confined to the Kenai Peninsula and the eastern Chugach Range. The Tanana, Central, and Upper Yukon basins are reporting record snowpacks. Portions of the Susitna and Copper are also reporting historic snowpack. Of the 178 stations with 10 or more years of record, 31 reported their period of record high water content for March 1.

### Precipitation

February precipitation was inconsistent across Alaska. Northwest Alaska and portions of the Kenai Peninsula reported below normal monthly precipitation. The rest of the state reported between near normal to much above normal monthly precipitation. Most of this precipitation came as snowfall, but lower elevation areas of Southeast and Southwest also received snow-melting rain as well. Southwest Alaska gained nearly three times normal February precipitation, while much of eastern Interior Alaska gained twice normal precipitation. Southeast, Cook Inlet, the Mat-Su, and the Copper Valleys all gained from 1.5 to 3 times the normal February precipitation.

### **Temperature**

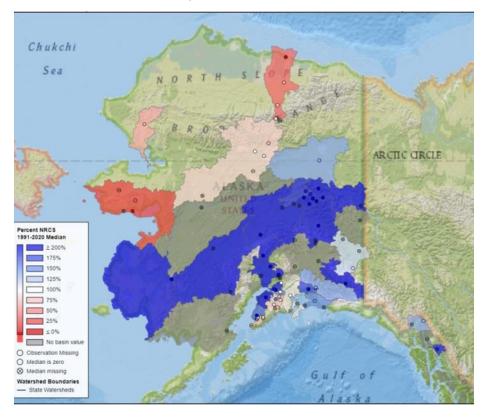
Temperature across Alaska was warmer than normal during February. In some cases, remarkably so. Gulkana and Talkeetna reported average monthly temperatures 15°F higher than normal. Anchorage was 11 degrees warmer than normal. Cordova and Juneau were also warm, 9°F and 7°F warmer than normal respectively. Nome, Bethel and Fairbanks all reported monthly averages that deviate from normal by more than 5°F.

Temperatures in North and Northwest Alaska were closer to normal. Utqiagvik was 1°F above normal while Kotzebue and Bettles reported an average monthly temperature which was right at normal.

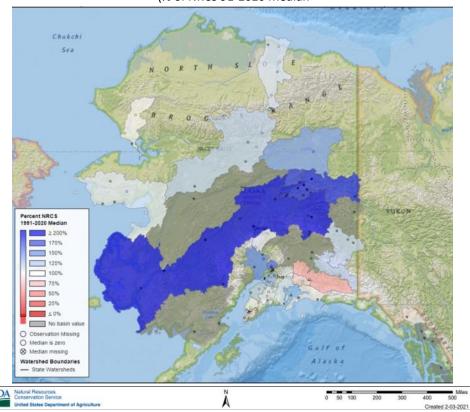
# Alaska Statewide Precipitation Maps

Monthly Precipitation for February, 2022

(% of NRCS 91-2020 Median

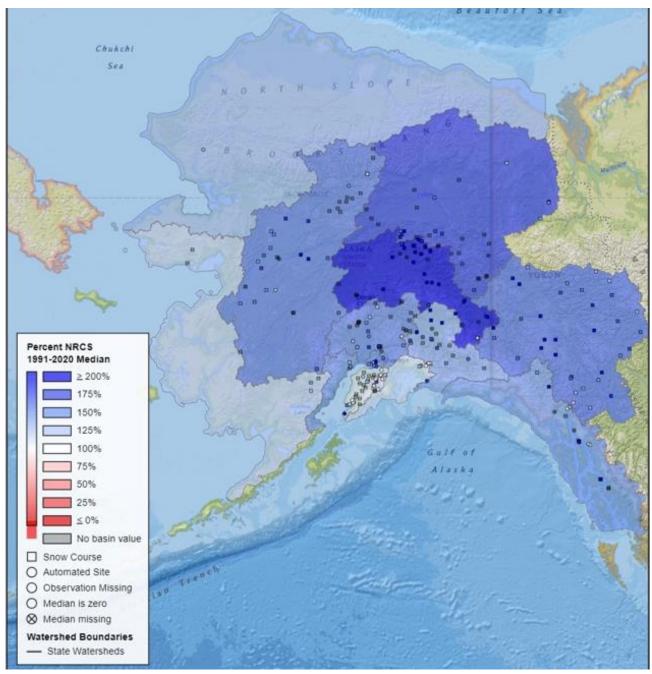


Water Year-to-date Precipitation (Oct. 1-Feb. 28, 2022) (% of NRCS 91-2020 Median



# Alaska Statewide Snowpack Map

Based on March 1st, 2022 Snow Water Equivalent





# **Streamflow Forecasts**

FORECAST POINT*	Percent of	Period
	Ave. Flow	
Yukon River at Eagle	140	April - July
Porcupine River nr Int'l Boundary	129	April - July
Yukon River near Stevens Village	126	April - July
Tanana River at Fairbanks	158	April - July
Tanana River at Nenana	148	April - July
Little Chena River near Fairbanks	197	April - July
Chena River near Two Rivers	168	April - July
Salcha near Salchaket	186	April - July
Kuskokwim River at Crooked Creek	118	April - July
Sagvanirktok River near Pump Station 3	118	April - July
Kuparuk River near Deadhorse	123	April - July
Gulkana River at Sourdough	188	April - July
Little Susitna River near Palmer	167	April - July
Talkeetna River near Talkeetna	129	April - July
Ship Creek near Anchorage	135	April - July
Kenai River at Cooper Landing	110	April - July
Bradley Lake Inflow	105	April - July
Taiya River nr Skagway	132	April - July

Snowmelt Runoff Index (SRI): for streams which no longer have stream gauging

The street is the street in th	ave stream gaaging		
FORECAST POINT	INDEX		
Koyukuk River at Hughes	_		
MF Koyukuk R near Wiseman	_	Index	Key:
Slate Creek at Coldfoot	_		
Beaver Creek above Victoria Creek	-2.0		much below aver-
Birch Creek below South Fork	-3.0	-2 to -3	age snowmelt run-
Caribou Creek at Chatanika	2.0		off
Susitna River near Gold Creek	3.0		UII
Chulitna River near Talkeetna	_		
Deshka River at mouth near Willow	_		below average
Montana Creek at Parks Highway	1.0	-1 to -2	snowmelt runoff
Willow Creek near Willow	2.0		
Skwentna River at Skwentna	1.0		avorago spovimolt
Chuitna River near Tyonek	2.0	-1 to +1	average snowmelt
Campbell Creek near Spenard	3.0	-1 (0+1	runoff
Indian Creek at Indian	0.0		
Bird Creek at Bird Creek	0.0		above average
Glacier Creek nr Girdwood	2.0	+1 to +2	snowmelt runoff
Six Mile Creek near Hope	-0.5		
Resurrection Creek near Hope	_		
Grouse Ck at Grouse Lake Outlet nr Seward	0.5	. 2 + 2	much above aver-
Anchor River near Anchor Point	0.5	+2 to +3	age snowmelt run-
Deep Creek near Ninilchik	-1.0		off
Ninilchik River near Ninilchik	-1.0		
Fritz Creek near Homer	-1.0		
Skagway River at Skagway	-2.0		
Municipal Watershed C nr Petersburg	1.5		
Gold Creek near Juneau	2.0		

### **HOW FORECASTS ARE MADE**

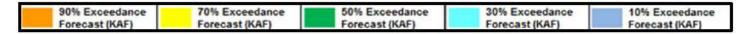
Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

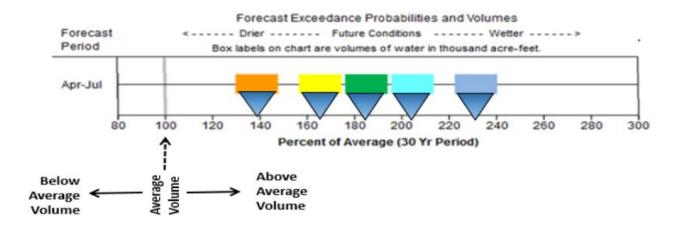
### **How to Interpret the Streamflow Forecast Graphic:**

This graphic provides a visual alternative to the forecast tables the NRCS has presented for years. It gives both the volume and percent of average of each of the five forecast exceedances.

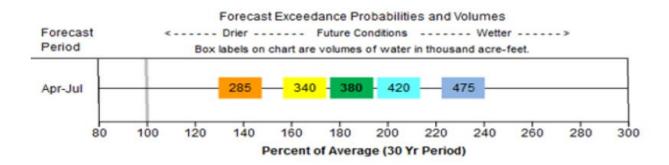


The five colored boxes represent each forecast's five exceedances.

The center of each forecast exceedance box corresponds to that exceedance's percent of average on the horizontal axis. In this case the green 50% exceedance forecast box is centered over 185% of average streamflow. If drier future conditions occur the orange box (90% exceedance) is 139% of average. If wetter future conditions occur the darker blue box (10% exceedance) is 232% of average. In some cases when exceedance volumes are similar, the width of the colored boxes gets squeezed. Still use the center of the box to determine its percent of average. The width of the box is irrelevant. Boxes to the right of the gray 100% of average line represent above average volumes. Conversely,



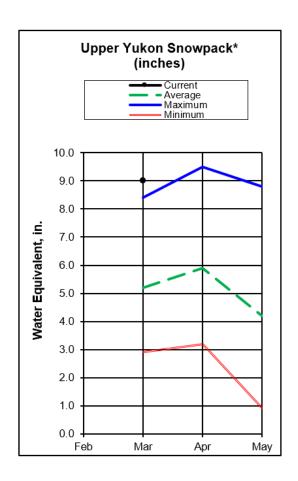
any boxes to the left of the gray 100% line represent below average volumes. In this case all forecast exceedances are for above average April-July volumes. Averages are based on the 1981-2010 period. The number inside or above each colored box represents the volume of that exceedance forecast in thousand acre-feet (KAF). In this case the green 50% exceedance forecast volume is 380 KAF which is centered above 185% of average. Volumes decrease with drier future conditions (left of green

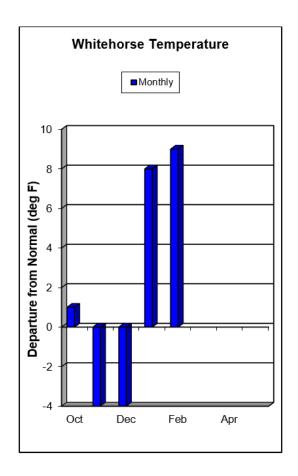


box) and increase with wetter conditions (right of green box).

Forecast graphics for other basins are available at: https://www.wcc.nrcs.usda.gov/wsf/Fcst\_Chart/ This is an new product. Please submit likes, dislikes and questions to Daniel.Fisher2@usda.gov

## **Upper Yukon Basin**





### **Snowpack**

The snowpack in the upper Yukon is well above normal. The 34 sites used to index this basin are 163% of median. There isn't a single snow course in the upper Yukon that is reporting below normal. In fact, the smallest deviation is the Bonnet Plume Lake snow course at 103%. There are many period-of-record maximums. Eagle River (40 observations), Midnight Dome (48 observations), King Salomon Dome (48 observations), Pelly Farm (38 observations), Mt. Nansen (46 observations), Macintosh (46 observations), Mt. Berdoe (47 observations), Williams Creek (26 observations), Mt. McIntyre B (48 observations), Whitehorse Airport (58 observations), Jordan Lake (33 observations), Burns Lake (34 observations), Twin Creeks (45 observations), Russel Lake (34 observations), Plata Airstrip (43 observations), and Mayo Airport (53 observations) are all reporting March 1 record water contents. Yukon River forecasters are watching this basin closely for flooding potential, as breakup has the potential to be one for the books.

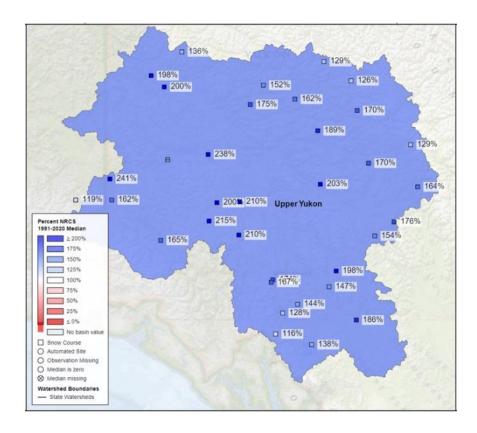
# Upper Yukon Basin

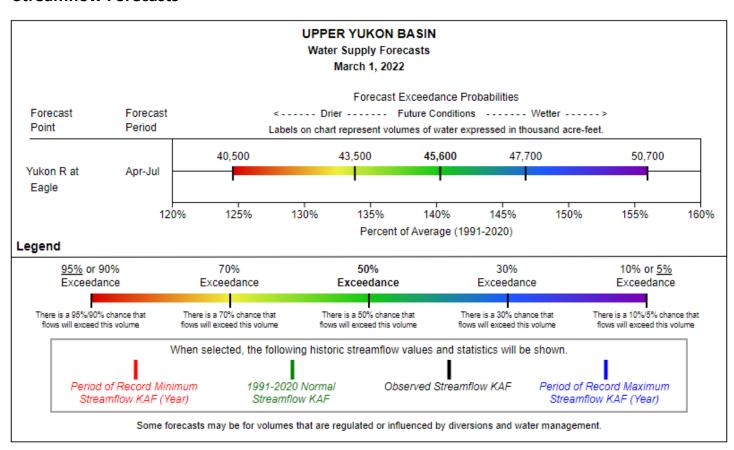
# **Snowpack Data**

		Snow Depth (in)			Water Content (in)		
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Beaver Creek	2150	32	22	16	6.5	4.3	2.7
Blackstone River	1020	33	22		6.7	3.8	
Burns Lake	3650	57	42	36	12.5	9.3	7.6
Burwash Airstrip	2660	18	10	10	2.8	1.4	1.7
Calumet	4300	46	33	34	9.7	6.6	6.4
Chair Mountain	3500	26	20	20	5.2	2.8	3.0
Eagle Plains	2330	39	28	30	8.4	5.6	5.6
Eagle River	1115	38	26	26	8.0	4.0	4
Edwards Lake	2720	41	35	27	8.6	6.6	5.3
Finlayson Airstrip	3240	35	27	20	6.7	5.4	3.8
Francis River	730	46	35		9.3	7.6	
Fuller Lake	3695	43	35	32	8.8	6.4	6.8
Grizzly Creek	3200	40	33	30	8.0	7.6	6.0
Hoole River	3400	37	37	25	7.4	7.9	4.8
Hyland	855	45			10.3		
Jordan Lake	3050	36	34	24	9.1	6.8	4.6
King Solomon Dome	3540	52	34	30	12.4	7.5	6.0
Macintosh	3805	32	24	20	7.3	3.7	3.4
Mayo Airport	1770	31	23	20	6.3	3.9	3.6
Meadow Creek	4050	60	55	42	15.6	12.7	10.6
Midnight Dome	2805	50	34	28	11.1	7.5	5.6
Montana Mtn.	3350	28	36	25	6.9	8.7	5.4
Morley Lake	2700	37	30	24	9.1	5.6	4.9
Mt. Berdoe	3395	42	28	22	8.6	4.7	4.1
Mt. Mcintyre B	3600	40	35	26	9.0	7.4	5.4
Mt. Nansen	3350	29	21	17	5.4	3.3	2.7
Ogilvie River	550	30	25		6.0	4.2	
Old Crow	980	31*		26	5.8*		4.5
Pelly Farm	1550	26	24	15	6.9	3.9	3.0
Pine Lake Airstrip	995	55	52		13.6	10.8	
Plata Airstrip	2725	48	37	29	10.4	7.3	6.1
Rackla Lake	3410	41	31	30	8.0	5.8	6.0
Riffs Ridge	2130	35	27	29	7.5	5.0	5.2
Rose Creek Faro	1080	35	26	25	7.7	5.3	3.8
Russell Lake	3480	58	38	35	14.0	7.9	7.4
Satasha Lake	3630	29	24	19	6.5	4.0	3.0
Summit	985	43	55	31	11.0	16.2	7.4
Tagish	3540	33	34	26	8.0	7.2	5.2
Twin Creeks	2950	50	34	30	10.4	7.0	6.1
Watson Lake Airport	685	46	30		10.4	6.6	
Whitehorse Airport	2300	28	29	20	6.6	5.9	3.8
Williams Creek	3000	34	25	19	6.9	4.1	3.0
Withers Lake	3200	46	36	34	9.3	6.6	7.4
*Estimate	3200	-10	30	<del>-</del>	0.0	0.0	7.7
_cannato							

# **Upper Yukon Basin**

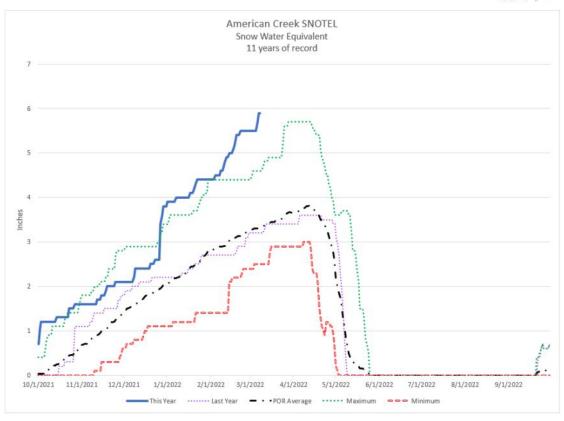
### **Upper Yukon Snowpack**

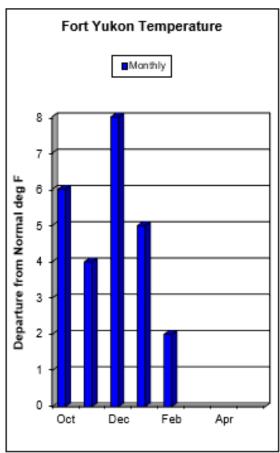




## Central Yukon Basin







### **Snowpack**

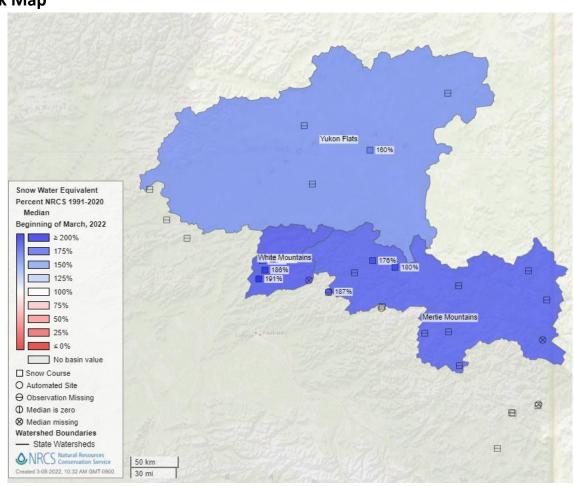
The snowpack in the Central Yukon basin is above normal. February precipitation was above average and snowpacks continue to be bolstered by massive totals from December and higher-than-normal gains during February. All reporting stations are well above median. Stack Pup Creek (33 observations) and Circle Hot Springs (47) observations are reporting their 2<sup>nd</sup> highest March 1 snow water contents on record. The basin index is reporting 192% of normal snow water equivalent for the on March 1, 2022.

# Central Yukon Basin

## **Snowpack Data**

		Snow Depth (in)			Water Content (in)		
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
American Creek	1050	30	17		5.5	3.2	
Atigun Pass	4800	36	38				
Borealis	1330	38	30	23	8.4	4.5	4.4
Circle Hot Springs	860	36	23	22	6.3	3.4	3.5
Eagle Summit	3650	23	9				
Fort Yukon	430	25	14				
Fort Yukon	430	27		20	4.8		3.0
Fossil	1400	36	25	22	7.8	3.9	4.2
Jack Wade Jct	3585	39	26		7.3	3.8	
Old Crow	980	31		26	5.8		4.5
Stack Pup Creek	1620	36	23	22	6.0	3.3	3.4
Upper Nome Creek	2520	38			8.1		
Windy Gap	1900	38		25	9.8		4.8
Wolf	1200	33	26	22	6.6	4.4	4.1
*Estimate							

## **Snowpack Map**

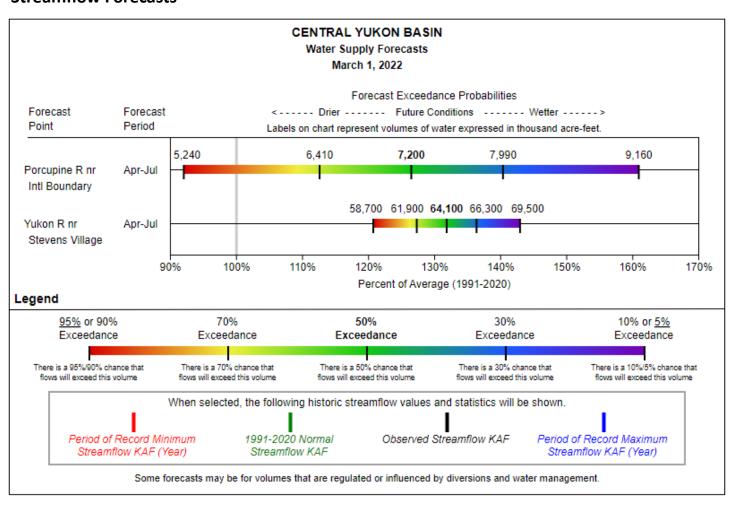


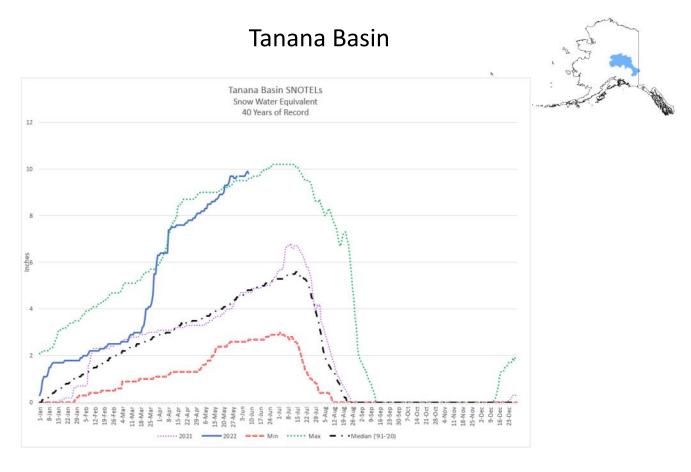
## Central Yukon Basin

### **Precipitation**

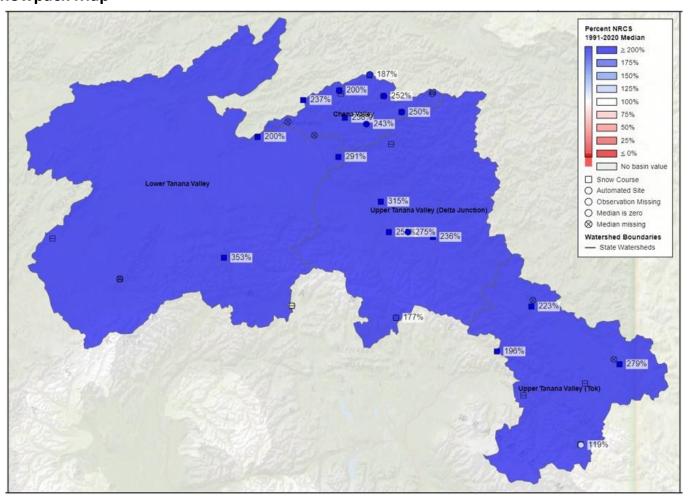
Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal
American Creek	1050	4.5	3.0		
Atigun Pass	4800	5.3	3.4	4.8	110%
Eagle Summit	3650	9.2	3.4	4.4	209%
Fort Yukon	430	4.4	2.5	3.1	142%
Jack Wade Jct	3585	6.2	4.4		
Upper Nome Creek	2520	9.8		5.4	181%





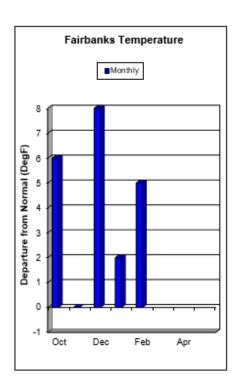
## **Snowpack Map**



## Tanana Basin

### **Snowpack**

The Tanana basin snowpack is well above normal. After a below average January, February precipitation was above average, and substantial snowpack gains were made at all reporting stations. The closest to normal is Chisana, in the upper basin, at 119% of median. The entirety of the rest of the basin is at or near record snowpack for March 1, with many snow courses are reporting all-time records. Beaver Creek (48 observations), Chair Mountain (27 observations), Tok Junction (63 observations), Gerstle River (39 observations), Fort Greely (56 observations), Shaw Creek Flats (63 observations), French Creek (61 observations), and Faith Creek (34 observations) are all reporting period of record March 1 water content maximums. The basin index is reporting 221% of normal snow water content for March 1, 2022.



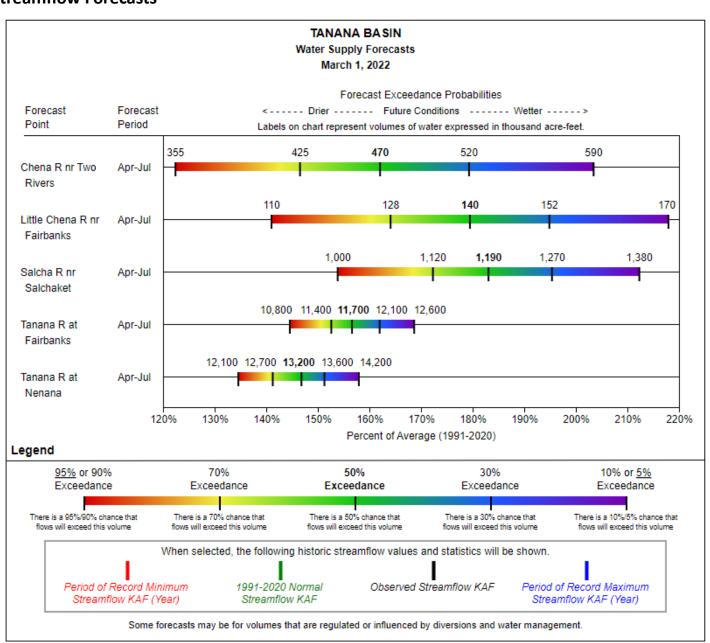
### **Snowpack Data**

		Snow Depth (in)			Water Content (in)		
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Bonanza Creek	1150	43	26	22	9.2	5.0	4.6
Caribou Creek	1250	35	26	22	7.6	5.0	4.2
Caribou Snow Pillow	900	37	26	23	8.1	4.9	3.8
Chena Lakes	500	33	22		8.0	4.0	
Chisana	3320	20	19		3.8	2.9	3.2
Cleary Summit	2230	51	31	28	12.3	4.9	5.2
Colorado Creek	700	41	28	22	8.8	4.2	3.7
Creamers Field	440	31			6.6		
Faith Creek	1750	40	28	24	8.5	4.6	4.2
Fielding Lake	3000	53	31		11.3	6.3	
Fielding Lake	3000	64	34	37	15.2	7.2	8.6
Fort Greely	1500	35	19	16	7.5	2.6	2.9
French Creek	1800	52	34	24	13.4	6.1	4.6
Gerstle River	1200	33	20	16	6.6	2.8	2.8
Granite Crk	1240	31	19		8.8	3.4	3.2
Kantishna	1550	36	34		9.0	6.3	
Mentasta Pass	2430	44	30	25	9.8	5.6	5.0
Monument Creek	1850	46	25		11.6	4.6	4.6
Mt. Ryan	2800	42	28		9.7	5.3	5.2
Munson Ridge	3100	66	38		16.8	7.6	6.9
Nenana	415	31	16				
Paradise Hill	2200	34		16	7.8		2.8
Paradise Hill	2010	31			7.1		
Ptarmigan Airstrip	2400	38			8.4		
Rock Creek Bottom	2250	50		20	13.4		3.8
Shaw Creek Flats	980	39	19	16	8.2	2.8	2.6
Teuchet Creek	1640	38	24		8.5	4.1	3.4
Tok Junction	1650	34	19	18	6.9	2.5	3.1
Upper Chena	2850	50	37				5.4
*Estimate							

### Tanana Basin

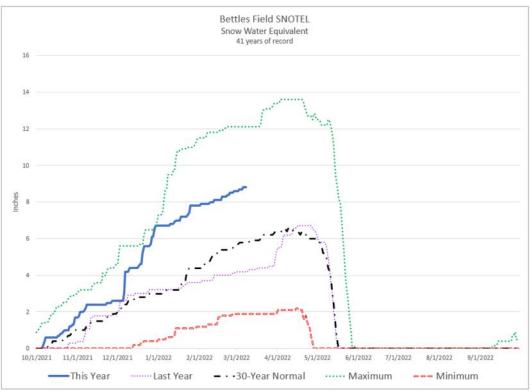
### **Precipitation**

Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal
Chena Lakes	500	11.4	5.2		
Chisana	3320	3.8	3.4	3.2	119%
Creamers Field	440	8.6			
Fielding Lake	3000	12.6	6.3		
Granite Crk	1240	7.5	3.6	3.4	221%
Kantishna	1550	12.6	5.3	5.0	252%
Monument Creek	1850	10.2	4.5	5.2	196%
Mt. Ryan	2800	9.5	5.3	4.4	216%
Munson Ridge	3100	14.6	6.1	6.4	228%
Nenana	415	8.8	3.6		
Paradise Hill	2010	6.8			
Teuchet Creek	1640	8.6	4.1	3.8	226%
Upper Chena	2850	7.7	6.5	5.3	145%

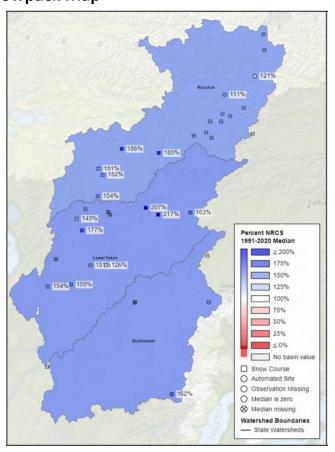


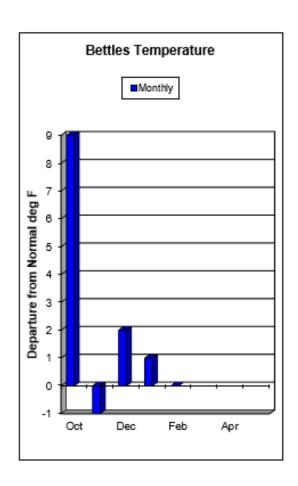
## Western Interior Basins





## **Snowpack Map**





## Western Interior Basins

### Snowpack

#### **Koyukuk**

Snow in the Koyukuk basin is above normal. All stations are reporting above average March 1 snow water content. Huggins Creek and Treat Island are both reporting their highest water content in 16 years. February precipitation was below normal for the second month in a row. Snowpacks continue to be bolstered by big gains made in December. The 7 stations used to index the basin are reporting 156% normal snow water content on March 1, 2022.

#### Kuskokwim

Snow in the Kuskokwim basin is above average. Telaquana Lake snow course is reporting 6.5" water content, the second highest March 1 reading in 27 years of observations. The lower Kuskokwim received copious precipitation, but not all of it as snowfall. Aniak ended the month with the same snow depth it started with. McGrath snowpack is estimated to be 183% of normal.

### **Lower Yukon**

The Lower Yukon has an above normal snowpack with the basin index at 145% average. Galena AK SNOTEL has 32" of snow with 6.8" of water content, the highest March 1 reading in its four-year record.

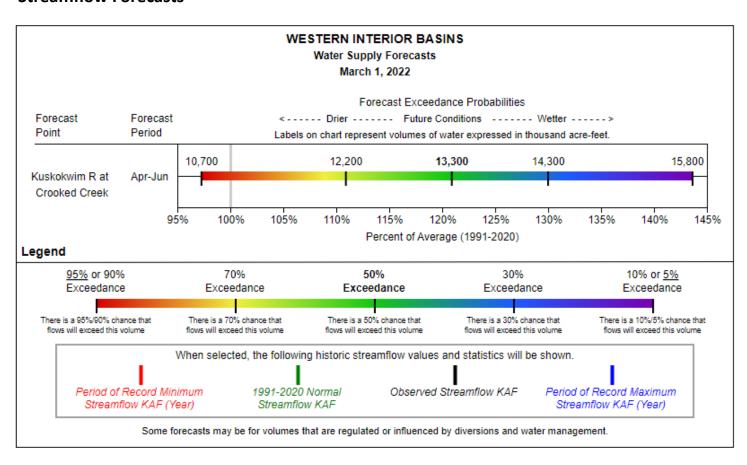
### **Snowpack Data**

		Snow Depth (in)			Water Content (in)		
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Koyukuk							
Bettles Field	640	35	21		8.6	4.2	5.7
Cloverleaf	170	32	31	23	7.3*	6.0*	4.8
Coldfoot	1040	31	18		7.0	2.8	5.8
Colville Bend	170	35	30	27	8.0*	5.7	5.3
Gobblers Knob	2030	6	2				
Huggins Creek	290	47	26	30	11.1*	4.9*	6.0
Jr Slough	160	34	33	27	7.7*	5.4*	5.0
Treat Island	190	33	15	26	9.1*	2.8*	4.9
Kuskokwim							
Aniak	80	13	23				
McGrath	340	38	36		10.9	7.7	
Telaquana Lake	1550	22	34	21	6.5	6.0	4.0
Telaquana Lake SNOTEL	1275	19	30		6.3	6.6	
Lower Yukon							
Bullfrog	100	51	43		12.5*	8.5*	
Deer Creek	195	48	32	33	12.0*	6.3*	5.8
Galena AK	410	32	25		6.8	4.8	
Galena Ecological Site	128	33	28		9.3	4.6	
Hozatka Lake	206	24	20				
Little Mud River	855	27	24	21	7.0*	4.3*	4.3
Lower Nowitna River	205	33	24	22	9.1*	4.6*	4.2
Middle Innoko	150	42	43	32	10.8*	7.9*	6.8
Ninemile Island	140	39	38	32	8.6*	7.2*	6.0
Pike Trap Lake	130	24	18	16	5.3*	3.4*	3.0
Upper Innoko	180	32	36	33	9.1*	7.0*	7.2
Wapoo Hills	220	41	50	33	11.2*	10.2*	7.4
Yankee Slough	100	48	41	39	12.8*	7.7*	8.3
*Estimate							

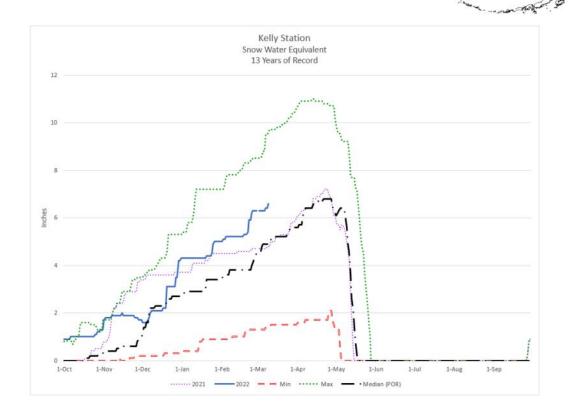
## **Western Interior Basins**

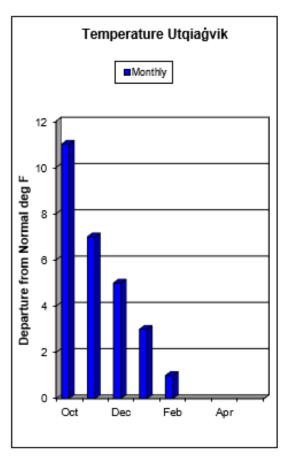
### **Precipitation**

		Inches Accumulated since October 1st						
Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal			
Koyukuk								
Bettles Field	640	8.0	3.9	6.2	129%			
Coldfoot	1040	5.9	4.0	4.8	123%			
Gobblers Knob	2030	6.1	3.6	5.5	111%			
Kuskokwim								
Aniak	80	15.4	8.3	4.7	328%			
McGrath	340	11.6	7.4					
Telaquana Lake	1275	11.8	8.0					
Lower Yukon								
Galena AK	410	7.2	5.0					
Hozatka Lake	206	5.9	4.4					



# Arctic and Kotzebue Sound





### **Snowpack**

#### <u>Arctic</u>

The stations along the Dalton highway are reporting a second month in a row of below normal winter precipitation. February precipitation was 50% of average for the 4 stations used to index this basin. Snow depths at the 3 stations along the Dalton Highway are close to period of record median.

### Kotzebue

Snowpack in the Kotzebue Sound is above average. Kelly Station, the only SNOTEL station used in this region, is reporting 28" of snow and 6.3" water content. This ranks  $5^{th}$  out of 13 observations and 134% of period-of-record median.

# Arctic and Kotzebue Sound

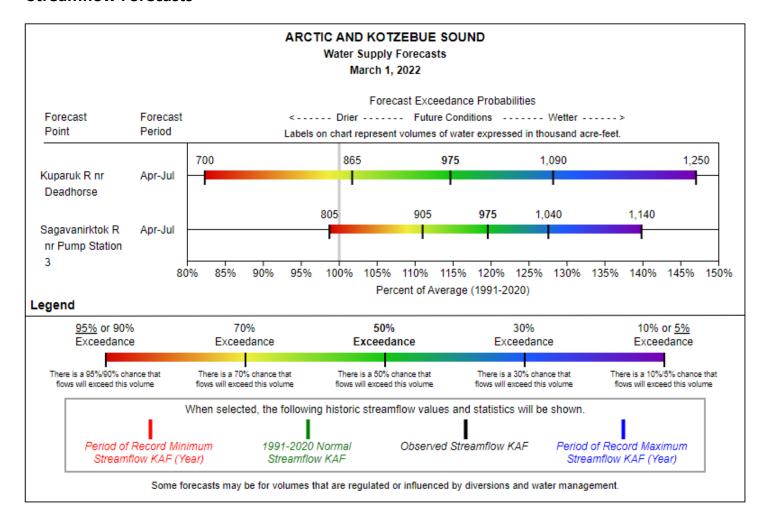
## **Snowpack Data**

		Snow Depth (in)			Water Content (in)		t (in)
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Atigun Pass	4800	36	38				
Imnaviat Creek	3050	18	19				
Kelly Station	310	28	21		6.3	4.7	4.6
Prudhoe Bay	30	17	7				
Sagwon	1000	16	20				
*Estimate							

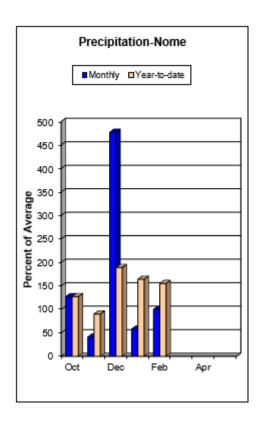
## Precipitation

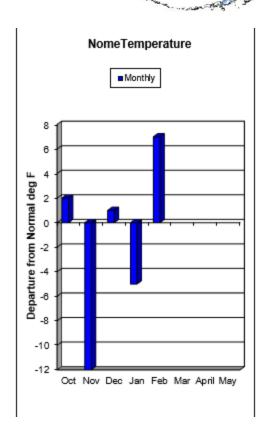
		Inches Accumulated since October 1st							
Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal				
Arctic									
Atigun Camp	3400	2.1	3.8	3.0	70%				
Atigun Pass	4800	5.3	3.4	4.8	110%				
Imnaviat Creek	3050	2.7	1.9	2.4	113%				
Prudhoe Bay	30	2.2	2.6	2.3	96%				
Sagwon	1000	3.1	2.1	2.5	124%				
Kotzebue Sound									
Kelly Station	310	5.0	6.0	5.1	98%				

## Arctic and Kotzebue Sound



# Norton Sound/Y-K Delta/Bristol Bay





### **Snowpack**

The Seward Peninsula received below average precipitation for February. The 3 stations used to index the basin are reporting 33% monthly precipitation for February. Reported snow depths at Rocky Point and Pargon Creek are slightly above period-of-record median.

Precipitation in Southwest Alaska was reported as above much above normal for February.

### **Precipitation**

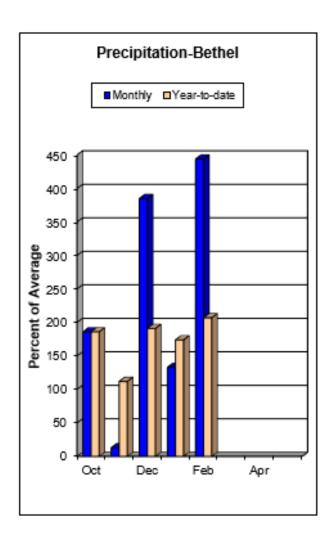
Inches Accumulated since October 1st

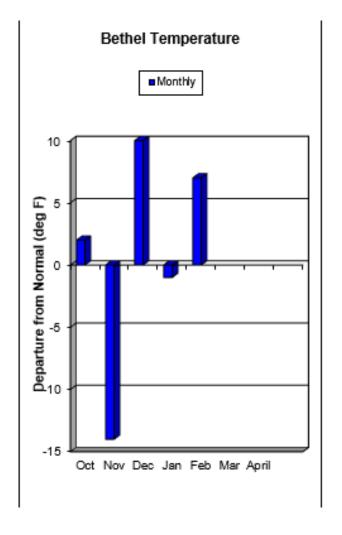
Site Name	Elev.	This Year	Last Year	1991-2020 Nor- mal	% of Normal
Norton Sound					
Pargon Creek	100	6.2	5.0	5.3	117%
Rocky Point	250	5.1	3.2	5.1	100%

# Norton Sound/Bristol Bay

## **Snowpack Data**

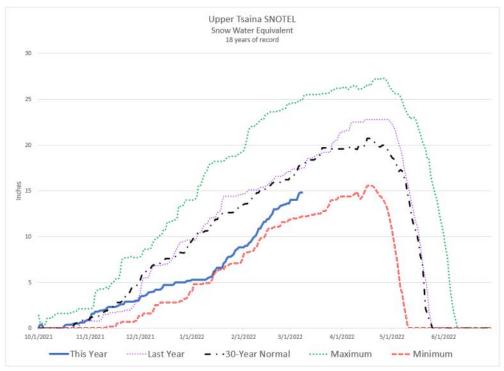
		Snow Depth (in)			Water Content (in)		t (in)
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Johnsons Camp	25	13	14				
Pargon Creek	100	15	8				
Rocky Point	250	24	13				
*Estimate							

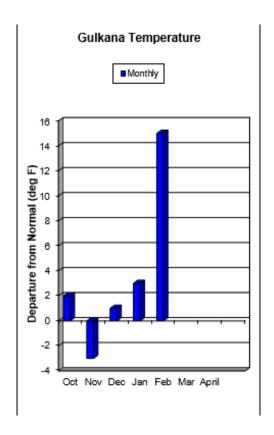




# **Copper Basin**







### **Snowpack**

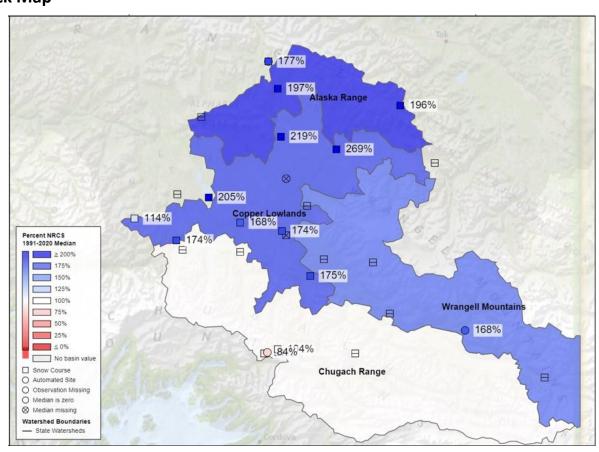
Snowpack in the Copper River Basin is mostly above normal. The northern extent of the basin is well above normal. Paxson (41 observations), Tolsona Creek (38 observations), Tazlina (27 observations), and Chistochina (38 observations) snow courses are reporting the highest period-of-record March 1st water contents. Haggard Creek (58 observations), Little Nelchina (34 observations), and Kenny Lake School (43 observations) are reporting the 2<sup>nd</sup> highest March 1st water contents. The reporting stations near Thompson Pass in the Chugach Mountains tell a different story with below average snowpack at Tsaina River and Worthington Glacier snow courses. Upper Tsaina River SNOTEL is reporting 14.0" water content; the 2<sup>nd</sup> lowest in 19 observations. Still, the 17 stations used to index the basin are reporting 140% of normal for March 1, 2022.

# **Copper Basin**

## **Snowpack Data**

Silowpack Bata	s	now Depth (	in)	Water Content (in)			
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Chistochina	1950	39	24	20	8.6	4.2	3.2
Copper Center	1264	29	18		6.7	3.2	
Fielding Lake	3000	64	34	37	15.2	7.2	8.6
Fielding Lake	3000	53	31		11.3	6.3	
Gulkana River	1830	32	20		7.5	5.0	
Haggard Creek	2540	51	25	26	11.4	4.0	5.2
Kenny Lake School	1300	25	18	17	5.6	3.0	3.2
Little Nelchina	2650	32	18	24	7.5	3.3	4.3
May Creek	1610	34	36		7.4	7.1	4.4
Mentasta Pass	2430	44	30	25	9.8	5.6	5.0
Paxson	2650	52	32	30	11.4	5.3	5.8
Tazlina	1250	28	17	19	6.1	3.1	3.5
Tolsona Creek	2000	29	20	22	6.7	3.2	4.0
Tsaina River	1650	54	50	51	14.0	13.8	13.5
Upper Tsaina River	1750	62	65		14.0	17.1	16.6
Worthington Glacier	2100	78	72	67	19.7	18.0	21.6
*Estimate							

## **Snowpack Map**

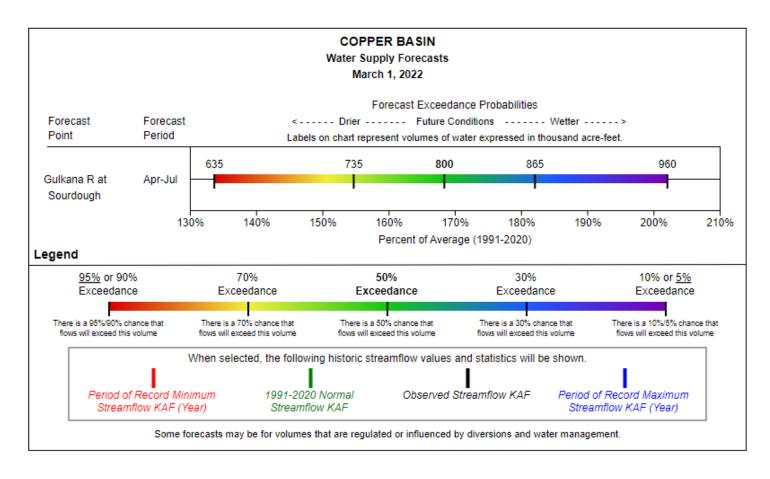


# **Copper Basin**

### **Precipitation**

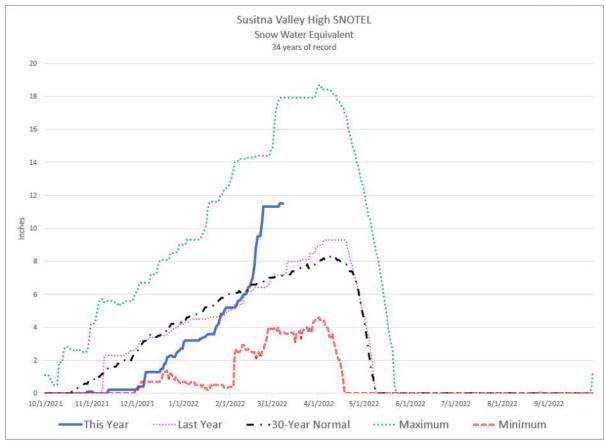
Inches Accumulated since October 1st

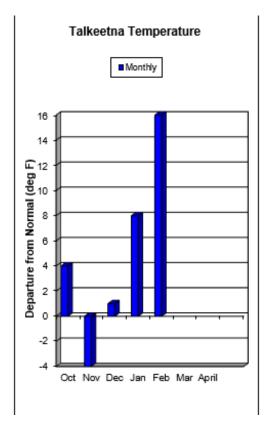
Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal
Fielding Lake	3000	12.6	6.3		
Gulkana River	1830	7.0	5.9		
May Creek	1610	7.0	7.1	5.8	121%
Upper Tsaina River	1750	15.8	21.7	23.5	67%



## Matanuska—Susitna Basin







### **Snowpack**

The snowpack in the Matanuska and Susitna Basins is well above average. In the upper basin, Lake Louise snow course is boasting the highest water content in its 59-year record. In the lower basin, huge gains were made over February as historic storms in the middle of the month were directed straight at the Talkeetna Mountains. Independence Mine received nearly five times its average monthly precipitation. Susitna Valley High, near Talkeetna, received nearly four times normal monthly precipitation and Tokositna Valley SNOTEL recorded more than double. All reporting stations have above average snow water content. The 13 stations that index the Susitna basin are showing 146% of normal water content for March 1.

# Matanuska—Susitna Basin

Snowpack Data

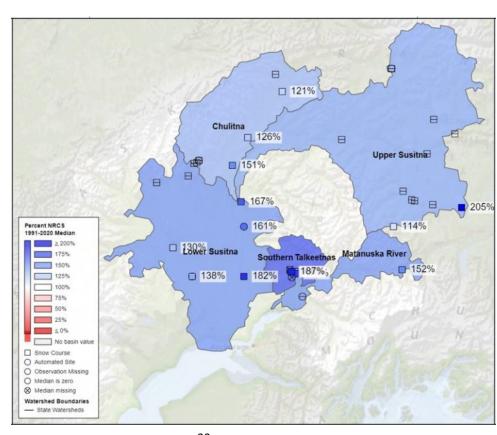
Snow Depth (in)

Water Content (in)

Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Alexander Lake	160	54	48	40	13.0	11.2	9.4
Alexander Lake	160	46	37		10.1	9.4	
Birthday Pass	4020	134	75		43.8	18.8	
Blueberry Hill	1200	69	54	44	14.6	11.7	11.6
Denali View	700	60	41	38	13.9	8.9	9.2
E. Fork Chulitna	1770	60	45	44	13.2	9.8	10.9
East Palmer	230	20	7			1.4	
Fishhook Basin	3300	96	59	55	28.6	13.7	15.3
Frostbite Bottom	2700	81	48		22.4	11.6	
Horsepasture Pass	4300	31	34	29	6.4	6.9	5.6
Independence Mine	3550	105	66	62	31.5	15.6	19.0
Independence Mine	3550	100	52		29.6	12.8	
Lake Louise	2400	34	21	24	8.2	3.8	4.0
Little Susitna	1700	67	50	36	16.4	10.0	9.2
Sheep Mountain	2900	33	24	24	7.3	4.6	4.8
Skwentna	160	53	44	37	12.1	10.2	9.3
Spring Creek	580	18	10				
Susitna Valley High	375	48	36		11.3	7.0	7.0
Talkeetna	350	45	32	27	10.0	6.5	6.0
Tokositna Valley	850	67	61			13.4	12.3
Willow Airstrip	200	42	46	27	10.4	9.9	5.7

<sup>\*</sup>Estimate

## **Snowpack Map**

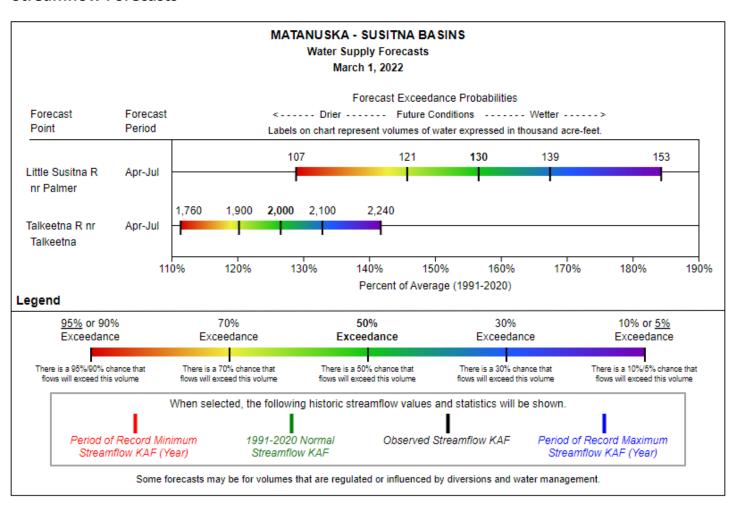


## Matanuska—Susitna Basin

### **Precipitation**

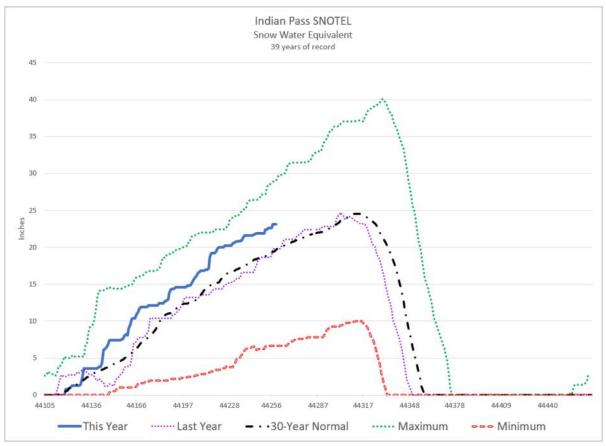
Inches Accumulated since October 1st

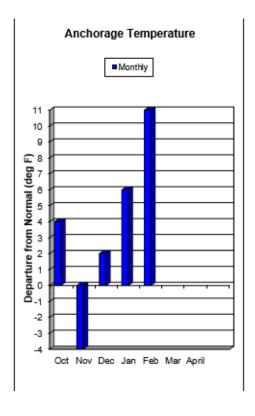
Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal
Alexander Lake	160	16.5	12.3		
Frostbite Bottom	2700	21.1	11.3		
Independence Mine	3550	24.8	12.3	15.0	165%
Spring Creek	580	10.3	5.8		
Susitna Valley High	375	15.5	9.4	10.1	153%
Tokositna Valley	850	19.3	13.6	18.1	107%



## Northern Cook Inlet







### Snowpack

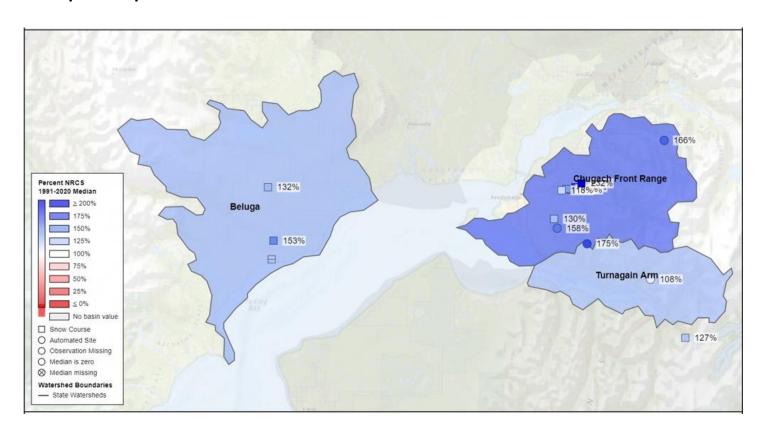
The Northern Cook Inlet region has an above average snowpack. All reporting stations in this region are boasting above average water content on March 1, 2022. Similar to the Matanuska/ Susitna basins, huge gains were made in February. However, gains were not uniform across the region. Moraine and Mt. Alyeska made near normal advances whereas the remainder of the stations that index this basin received 2-3 times average monthly precipitation. Rain/snow lines fluctuated over the month and there is an elevational component to February gains, although all reporting stations made gains in snowpack. Arctic Ski Bowl, the highest of the Arctic Valley snow courses at 3,000 feet above sea level (ASL), is reporting 22.0" of water content, the fourth highest on record and the most since the historic 2012 snow season. Arctic Valley #1, the lowest of the snow courses at 500 feet ASL is reporting 4.6", 118% of normal and 17<sup>th</sup> highest on record.

# Northern Cook Inlet

## **Snowpack Data**

		Snow Depth (in)			Water Content (in)		
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Anchorage Hillside	2080	45	40		12.0	11.0	7.6
Arctic Ski Bowl	3000	66	36	31	22.0	11.0	9.5
Congahbuna Lake	550	51	49	33	13.0	13.8	8.5
East Palmer	230	20	7			1.4	
Granite Point	250	33		17	9.7*		4.0
Indian Pass	2350	94	67		29.8	22.6	17.0
Kincaid Park	250	21	24	17	5.8	4.1	3.8
Lone Ridge	1675	101	82	73	31.3*	24.6*	23.8
Moraine	2100	33	30		9.3	7.0	5.6
Mt. Alyeska	1540	82	90		25.8	30.7	23.8
Portage Valley	50	38	50	36	14.2	15.4	11.2
South Campbell Creek	1200	23	35	24	7.0	8.0	5.4
Spring Creek	580	18	10				
*Estimate							

## **Snowpack Map**

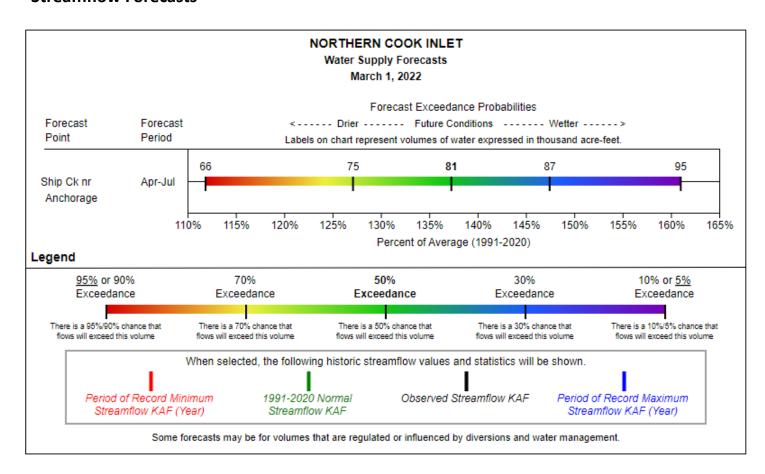


## Northern Cook Inlet

### **Precipitation**

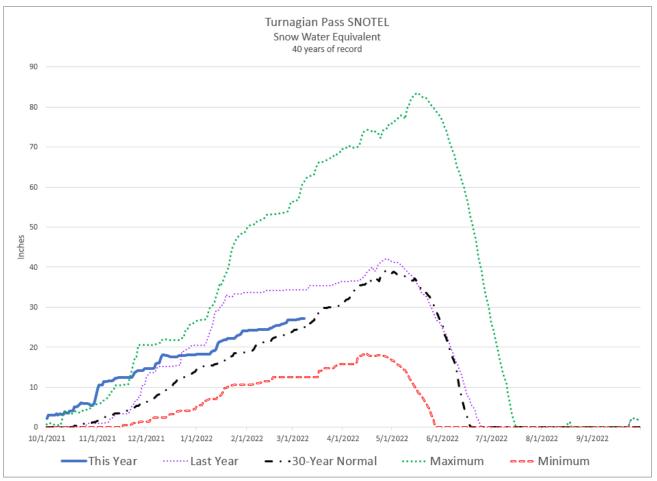
Inches Accumulated since October 1st

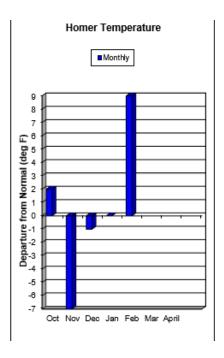
Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal
Anchorage Hillside	2080	15.4	12.2	12.1	127%
Indian Pass	2350	27.8	24.3	21.6	129%
Moraine	2100	12.8	9.2	9.3	138%
Mt. Alyeska	1540	45.0	36.4	37.6	120%
Spring Creek	580	10.3	5.8		



## Kenai Peninsula







### **Snowpack**

Snowpack on the Kenai Peninsula is generally above normal, although not uniformly so. The inland locations are reporting slightly below normal water content, with Anchor River Divide, Cooper Lake and Grandview SNOTELs at ~90% normal. The highest above normal snowpacks in this region are proximal to the entrance of Cook Inlet with Port Graham boasting 12.3" water content, 205% average and the 3<sup>rd</sup> highest on record. Homer Demonstration Forest is also well above normal, with 10.3" water content and 166% average. February precipitation mirrors snow totals in the region, with well above normal monthly precipitation near the coast, and considerably less inland. The 20 stations that index the Kenai region are reporting 114% average snow water equivalent for March 1, 2022.

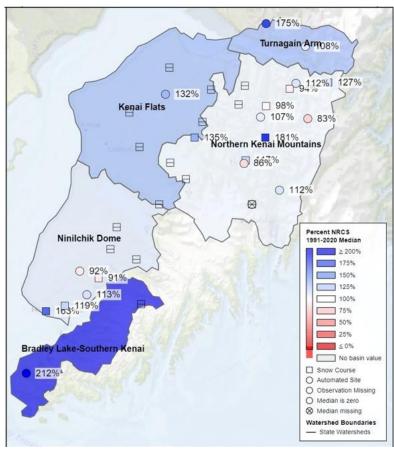
# Kenai Peninsula

## **Snowpack Data**

Showpack Data	S	now Depth (	in)	Water Content (in)			
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Anchor River Divide	1653	33	54		9.0	16.1	9.8
Bertha Creek	950	45	68	45	13.1	21.1	13.9
Bridge Creek	1300	36	46	32	11.3	11.3	9.5
Cooper Lake	1200	41	59		10.7	15.5	12.4
Demonstration Forest	780	31	35	22	10.3	9.0	6.3
Eagle Lake	1400	31	61	36	9.1	16.5	10.0
Exit Glacier SNOTEL	400	52	69		14.7	19.2	
Grandview	1100	65	94		20.0	28.1	24.1
Grouse Creek Divide	700	52	63		14.8	23.9	13.2
Jean Lake	620	14	21	14	4.2	4.3	3.1
Kenai Moose Pens	300	20	24		5.3	4.1	4.0
Kenai Summit	1390	47	58	44	12.0	17.6	12.2
Lower Kachemak Creek	1915	39	71				
Mcneil Canyon	1320	25	48		9.8	13.6	9
Middle Fork Bradley	2300	37	76				
Moose Pass	700	28	45	22	9.8	13.3	5.4
Mt. Alyeska	1540	82	90		25.8	30.7	23.8
Port Graham	300	31	35		12.3	7.1	5.8
Portage Valley	50	38	50	36	14.2	15.4	11.2
Snug Harbor Road	500	16	19	16	5	4.4	4
Summit Creek	1400	41	44		9.8	11.1	9.2
Turnagain Pass	1880	94	113		26.8	34.4	24.0

<sup>\*</sup>Estimate

## **Snowpack Map**



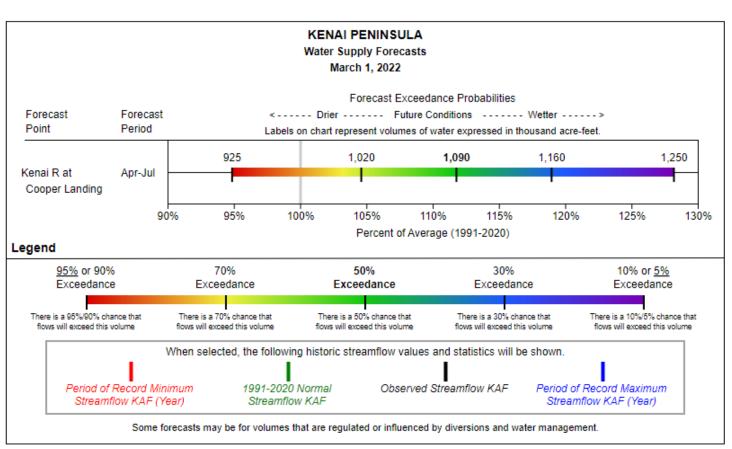
## Kenai Peninsula

### **Precipitation**

Inches Accumulated since October 1st

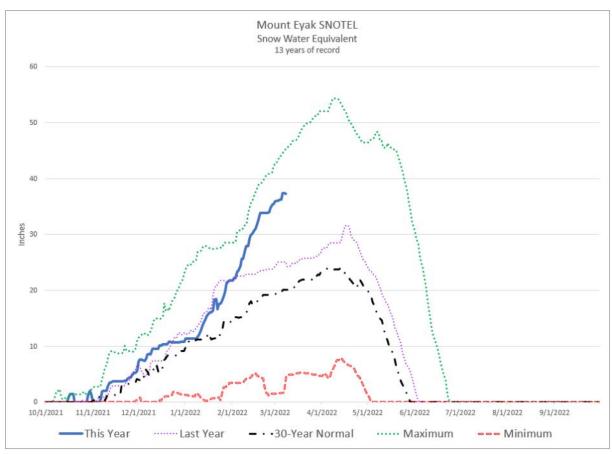
Site Name	Elev.	This Year	Last Year	1991-2020 Nor- mal	% of Normal
Anchor River Divide	1653	16.6	17.1	16.4	101%
Cooper Lake	1200	25.2	23.4	22.4	113%
Exit Glacier	400	41.6	50.8		
Grandview	1100	37.3	31.1	35.7	104%
Grouse Creek Divide	700	31.9	40.4	32.8	97%
Kenai Moose Pens	300	8.9	7.9	7.4	120%
Lower Kachemak Creek	1915	28.4	36.3		
Mcneil Canyon	1320	13.9	15.5	15.2	91%
Middle Fork Bradley	2300	26.6	32.5	27.3	97%
Mt. Alyeska	1540	45.0	36.4	37.6	120%
Summit Creek	1400	17.2	12.4	15.0	115%
Turnagain Pass	1880	33.8	37.5	31.6	107%

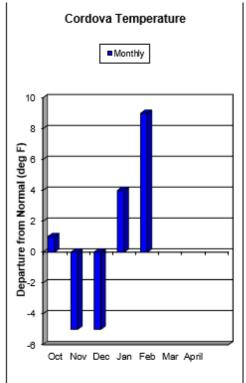
Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF)	30yr Average (KAF)
Bradley Lake Inflow	Apr-Jul	105	122	86	200	191



## Western Gulf - Prince William Sound







### **Snowpack**

Snowpack in the Western Gulf region is mostly above normal. Mt. Eyak has the most robust recorded snowpack in the region with 35.9" of snow water equivalent, the 2<sup>nd</sup> highest amount in 17 years and second only to 2012. Snowpack gains in February were most pronounced in the eastern portion of the region. Sugarloaf Mtn SNOTEL received 186% average monthly precipitation and substantial gains were made to the snowpack there. The Valdez snow course went from 9.0" snow water equivalent (83% normal) on February 1, to 18.6" snow water equivalent (134%) on March 1. On the western side of the region Nuka Glacier and Grouse Creek Divide reported ~70% normal monthly precipitation. Even with rain reported at lower elevations, all reporting stations made advances over the month and the 8 stations used to index this region are 116% snow water equivalent for March 1, 2022.

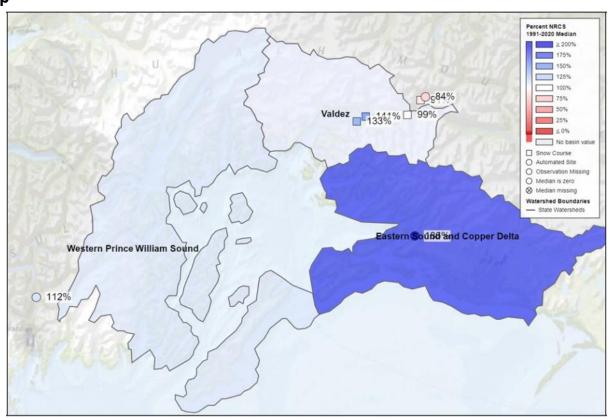
# Western Gulf — Prince William Sound

## **Snowpack Data**

Show pack Data			Snow Depth (in	)	Water Content (in)		
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Exit Glacier SNOTEL	400	52	69		14.7	19.2	
Grouse Creek Divide	700	52	63		14.8	23.9	13.2
Lowe River	600	55	51	47	14.4	14.0	14.6
Mt. Eyak	1405	95	80		35.9	24.3	19.3
Nicks Valley	4280	114	98				
Sugarloaf Mountain	550	101	81	64	26.0	21.9	19.6
Tsaina River	1650	54	50	51	14.0	13.8	13.5
Upper Tsaina River	1750	62	65		14.0	17.1	16.6
Valdez	50	67	52	44	18.6	12.7	13.2
Worthington Glacier	2100	78	72	67	19.7	18.0	21.6

<sup>\*</sup>Estimate

## **Snowpack Map**



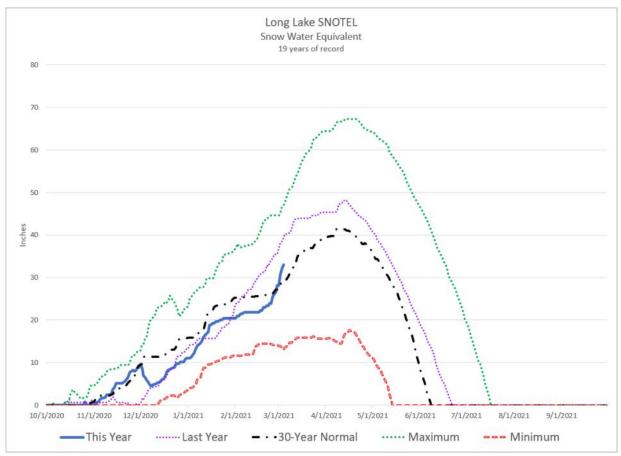
## **Precipitation**

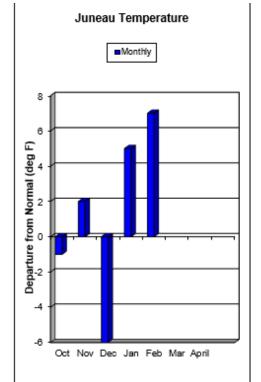
Inches Accumulated since October 1st

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Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal			
Esther Island	50	82.8	75.3	76.4	108%			
Exit Glacier	400	41.6	50.8					
Grouse Creek Divide	700	31.9	40.4	32.8	97%			
Mt. Eyak	1405	61.1	55.1	63.6	96%			
Nuchek	50	100.9	72.4					
Port San Juan	50	65.3	68.2					
Seal Island	20	34.8	33.8					
Strawberry Reef	30	38.8	35.1					
Upper Tsaina River	1750	15.8	21.7	23.5	67%			

## Southeast







### **Snowpack**

Snowpack in Southeast Alaska is above average. February precipitation was well above average, with Juneau AP reporting more than double average monthly precipitation. Moore Creek Bridge and Long Lake SNOTELS are reporting well above average monthly precipitation as well. However, rain lines were high over the month and low elevation snow stations suffered. This effect is clearly illustrated by the Douglas Island snow courses. Fish Creek at 500 feet ASL went from 5.5" snow water equivalent on February 1, to 5.1" water content on March 1, whereas Cropley Lake at 1650 feet ASL went from 27.3 to 44.7" snow water equivalent over the same period. These snow courses are only 3 miles apart. The 44.7" water content reported at Cropley Lake on March 1, 2022 is 194% normal and the second highest in 45 observations. The elevational effect is widespread throughout Southeast Alaska with the lowest deviations from normal being reported at the lowest elevation stations. Still all reporting stations in Southeast Alaska are reporting above average snow water equivalent for March 1, 2022.

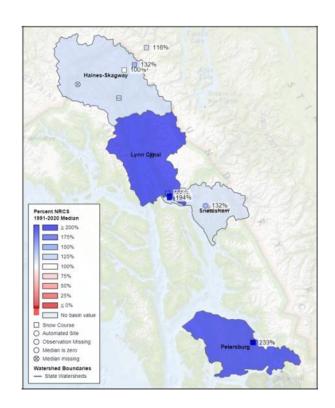
# Southeast

## **Snowpack Data**

Showpack Bata			Snow Depth (in	)	Water Content (in)		
Site Name	Elev.	Current	Last Year	1991-2020 Normal	Current	Last Year	1991-2020 Normal
Cropley Lake	1650	103	105	74	44.7	25.4	23.0
Eagle Crest	1200	68	76	44	26.3	21.5	13.1
Fish Creek	500	15	20	13	5.1	4.9	3.1
Heen Latinee	2065	79	62		25.0	18.8	
Long Lake	850	88	100		36.2	28.2	27.4
Moore Creek Bridge	2250	71	85	61	22.1	27.2	16.8
Moore Creek Bridge SNOTEL	2250	72	100				
Petersburg Reservoir	550	24	26	21	11.2	5.2	4.8
Petersburg Ridge, S.	1650	84	93	56	32.5	25.5	18.2
Speel River	280	74	75	66	26.0	22.2	26.6
West Creek	475	26	45	35	10.2	13.5	10.2

\*Estimate

### **Snowpack Map**



## **Precipitation Data**

Inches Accumulated since October 1st

Site Name	Elev.	This Year	Last Year	1991-2020 Normal	% of Normal
Long Lake	850	99.4	89.8	85.3	117%
Moore Creek Bridge	2250	21.8	31.0	23.8	92%

Forecast Point	Forecast Period	% of Average	Maximum(%)	Minimum(%)	50% Exceedance (KAF	) 30yr Average (KAF)
Taiya River near Skagway	Apr-Jul	132	152	112	615	465

### For further information contact:

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